CS 9950F

SERVICE MANUAL

Canon

Copyright 2004, Canon U.S.A. This technical publication is the proprietary and confidential information of Canon U.S.A. which shall be retained for reference purposes by Authorized Service Facilities of Canon U.S.A. Its unauthorized use is prohibited.

CanoScan 9950F
SERVICE MANUAL

REVISION 0

JY8-1323-000

COPYRIGHT 2004 CANON INC. CANON CanoScan 9950F 082004

Application

This manual has been issued by Canon Inc. to provide information necessary to self-study techniques, setting-up, maintenance and repair to technicians who service the target products. This manual covers all locations where the target products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Revision

This manual might include technically incorrect descriptions or misprints because the target products may be improved or changed. For this reason, service information is being published in case of any changes in this manual. If this manual is having a significant change, in long or in short term, a revised edition will be carried out.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

Trademarks

The product names and company names described in this manual are the registrered trademarks or tradmards of the individual companies.

Copyright

The copyright of this manual belongs to Canon Inc. Under the copyright law, this manual may not be copied,reproduced or translated into another language, in whole or in part, without the written consent of Canon Inc., always excepting the cases where copying a part of this manual is needed by business necessity.

Copyright 2004 by Canon Inc.

Canon Inc.
Ink Jet Scanner Quality Assurance Division
5-1, Hakusan 7-Chome, Toride-City, Ibaraki 302-8501, Japan

I. Outline

This manual is provided into 4 sections providing each necessary information to service the target product.

Part 1: Maintenance
Maintenance and repair related information of the target product

Part 2: Technical references
Technical matters such as new techniques and FAQ of the target product

Part 3: Parts catalog
Parts catalog of the target product

Part 4: Appendix
Block diagrams and specifications of the target product

II. Content

Page Part 1: Maintenance

1 - 1 1. Maintenance

1 - 1 1-1 Service Engineer adjustment/Periodic Replacement/Periodic Inspection/Replacement of Consumable

1 – 1 1-2 Customer Maintenance

1 – 1 1-3 Product Life

1 – 1 1-4 Special Tools

1 – 1 1-5 Serial Number Indicating Location

1 – 2 2. Service Troubleshooting by Symptom

1 – 2 2-1 Service Troubleshooting by Symptom

1 – 3 3. Servicing

1 – 3 3-1 Advisory for Replacement of Service Part

1 – 4 3-2 Instruction for Servicing

(1) Mounting Carriage Unt

(2) Mounting Button Circuit Board

(3) Grease Applying Position

1 – 6 4. Canon Scanner Test

1 –12 5. TransPort

Page Part 2: Technical Reference

2 – 1 1. New Features

2 – 2 2. Product FAQ

Page Part 3: Parts Catalog

3 – 1 Figure 1 Cable

3 – 3 Figure 2 MAIN BODY

Page Part 4: Appendix

4 – 1 1. Block Diagram

4 – 2 2. Specifications

Part 1
Maintenance

1. Maintenance

1-1 Service Engineer Adjustment/Periodic Replacement/Periodic Inspection/Replacement of Consumable

(1) Adjustment

item	period	purpose	tool	time
Apply grease	Replacing MOTOR UNIT	Apply grease to Motor gear	MOLYKOTE EM-50L (HY9-0007)	Approx. 2 min

(2) Periodic Inspection

item	period	purpose	tool	Time
N/A				

(3) Periodic Replacement

item	period	purpose	tool	Time
N/A				

(4) Replacement of Consumable

item	period	purpose	tool	Time
N/A				

1-2 Customer Maintenance

item	period	purpose	tool	Time
N/A				

1-3 Product Life

(1) Main Body

Scan Count:30,000 scan

1-4 Special Tools

Name	Tool Number	Purpose	remarks
MOLYKOTE EM-50L	HY9-0007-000	Apply to Motor gear sliding part	Diverted from precedent model

1-5 Serial Number Indicating Location

Back side of the main body

2. Service Troubleshooting by Symptom

2-1 Service Troubleshooting by Symptom

	symptom	Action	Remarks
Malfunction	Unit does not turn the power on Spontaneously shuts down right after turned on	Replace AC ADAPTER or replace MAIN PCB ASS'Y	
	Carriage does not operate	Replace MOTOR ASS'Y or replace MAIN PCB ASS'Y	
	Acoustic noise	Eliminate the foreign substance or replace MOTOR UNIT or replace MAIN PCB ASS'Y or replace CARRIAGE ASS'Y	
	Scanning lamp does not light up	ReplaceCARRIAGE ASS'Y or replace MAIN PCB ASS'Y	
Faulty scanned image	Blurred image	Clean PLATEN GLASS ASS'Y or replace CARRIAGE ASS'Y or replace MAIN PCB ASS'Y	
	Solid vertical line	Clean PLATEN GLASS ASS'Y or replace CARRIAGE ASS'Y	
	Solid horizontal line	Check the connection with PC or replace USB cable or replace MAIN PCB ASS'Y	
	Faulty color reproduction	Replace MAIN PCB ASS'Y	

3. Servicing

3-1 Advisory for Replacement of Service Part (also for disassembly and assembly)

Replacing Service Part	Note for replacement*1	Adjustment /Setting up	Verifying operation
MAIN PCB ASS'Y (FE2-0205-000)	Disconnect the power cord, leave the unit about 1 minute (to discharge the stored charge of the capacitor) and dismount the part (to prevent MAIN PCB ASS'Y broken)		Enforce scan operation
CARRIAGE ASS'Y (FE2-0206-000)	Be careful not to touch mirrors or CCD PCBs.		Enforce scan operation
PLATEN GLASS ASS'Y (FE2-0201-000)	Be careful not to put dirt or fingerprint on the document glass.		Enforce visual inspection

1:Note for entire work

Have a careful look on the wiring arrangement of flexible cable and harness, and connection of connectors. [Refer to 3-2 Instruction for Servicing (1) Wiring arrangement of flexible cable and harness, and connection of connectors]

3-2 Instruction for Servicing

1) Mounting Carriage unit

When Carriage unit is being mounted, be careful definitely not to touch CCD nor Lamp.

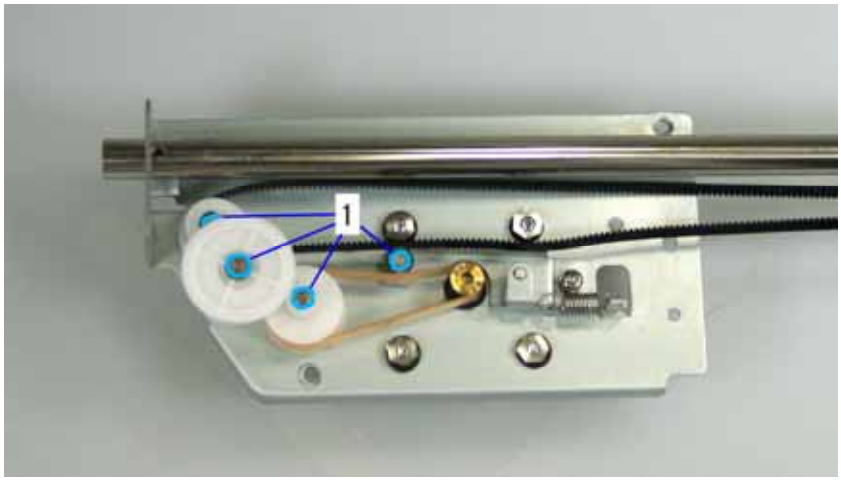
2) Mounting Button circuit board

Ferrite core is placed at the end of the Button circuit board. When Button circuit board is being mounted, push Ferrite core toward backside of main body and then mount Button circuit board.

3) Grease applying position

Part	Position		Grease/Oil	Dose
MOTOR ASS'Y	1	Motor gear sliding part	MOLYCOTE EM-50L	1/2 rice-grain amount

Note: 1 rice-grain amount : 9 - 18mg



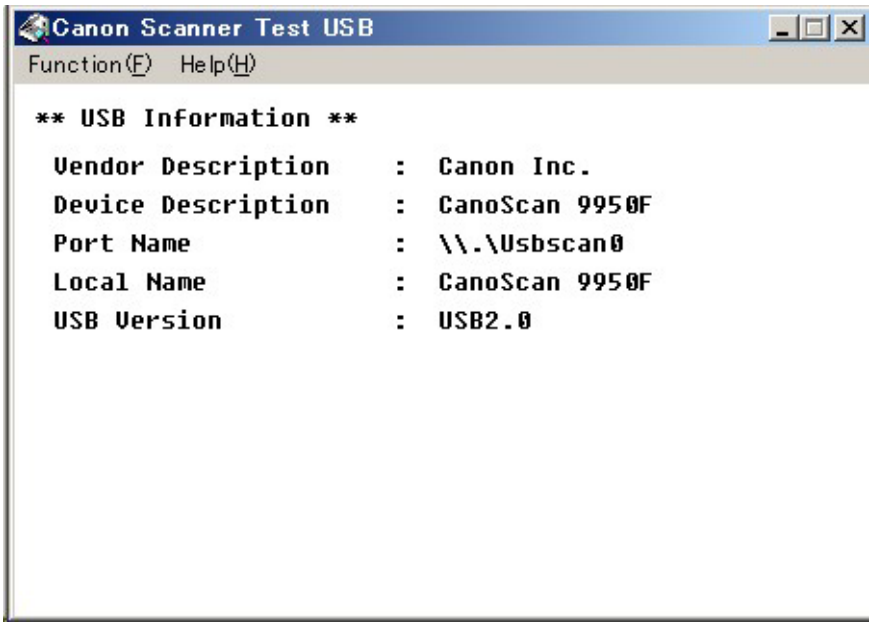
4. Canon Scanner Test

Functions	Procedure	Remarks
Interface information (Windows only)	Refer to the below <Check Program Operation>	
Scanner Information	Refer to the below <Check Program Operation>	
Scanner Self Test	Refer to the below <Check Program Operation>	
Scan	Refer to the below <Check Program Operation>	
Film Scan	Refer to the below <Check Program Operation>	

<Canon Scanner Test functions>

1) Interface Information (Windows only)

Select “Interface Information” form the “Function” menu. The screen below will appear.


Canon Scanner Test USB
Function(F) Help(H)
** USB Information **
Vendor Description : Canon Inc.
Device Description : CanoScan 9950F
Port Name : \\.\Usbscan0
Local Name : CanoScan 9950F
USB Version : USB2.0

Vender Description

Manufacturer name of the scanner, “Canon Inc.”

Device Description

Product name

Port Name

Port name of the scanner recognized by Windows

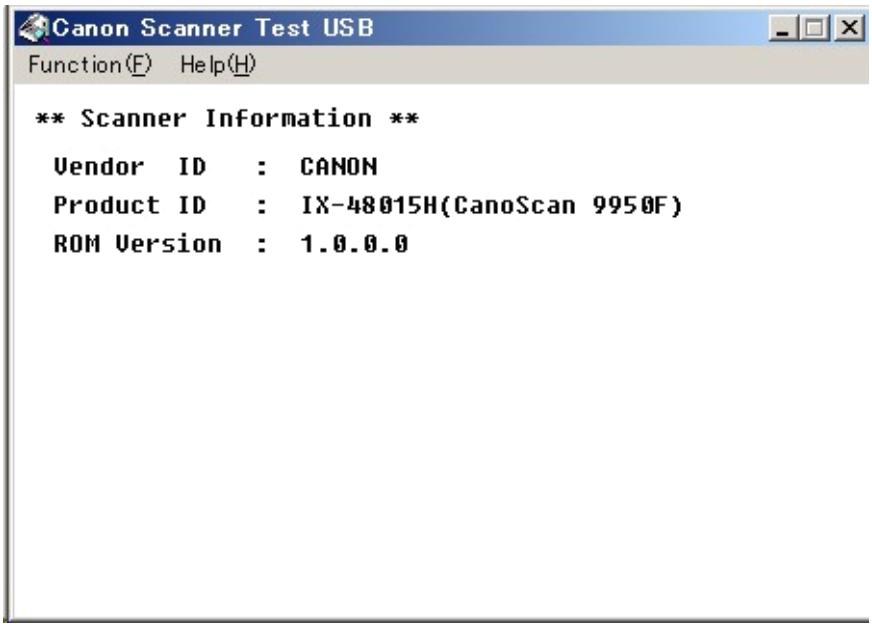
Local Name

Product name

USB Version

USB version

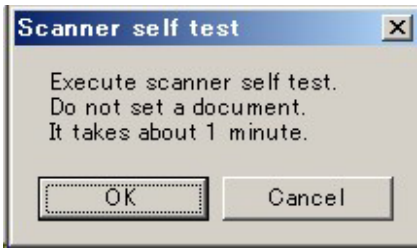
2) Scanner Information
Select “Scanner Information” from the “Function” menu. The screen below will appear.



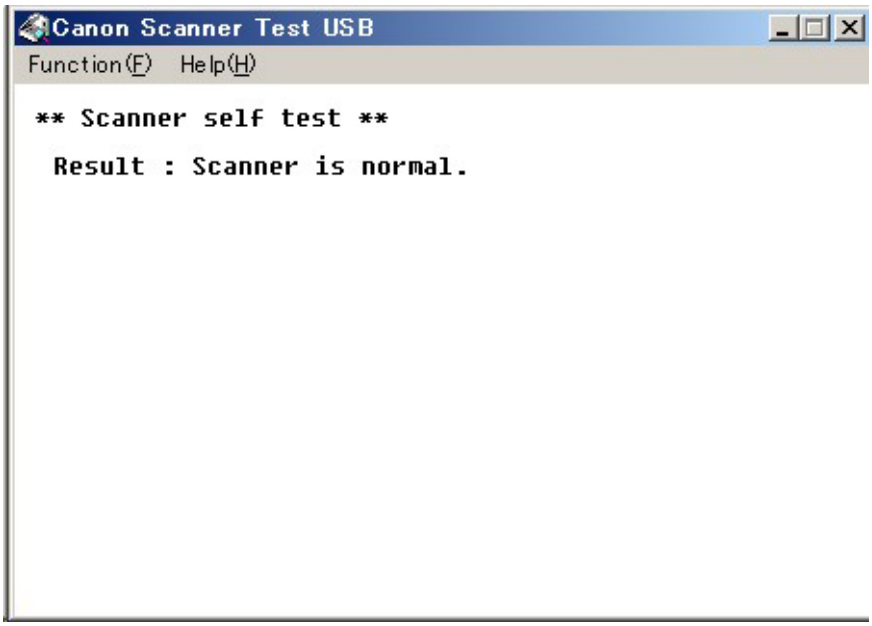
Vender ID
Manufacturer name of the scanner “Canon”
Product ID
Scanner name “IX-48015H(CanoScan 9950F)”
ROM Version
Firmware version of the control program of the scanner

3) Scanner Self Test

Select “Scanner Self Test” from the “Function” menu. The screen below will appear.



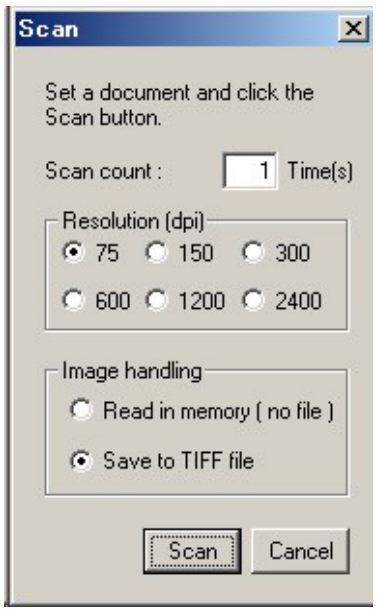
Click “OK” to start scanner self test. When completed normally, a dialog box shown below will appear.



When an error occurs, refer to “6.Error Message” to take a corrective action.

4) Scanning Original

Select “Scan” from the “Function” menu. The display will appear.



Scan count

Set the number to be scanned ranging from 1 to 100.

Resolution (dpi)

When the resolution for scanning an image is set at 75/150/300/600dpi, the entire area of the document glass is scanned. When set at 1200/2400dpi, the area of 10mm in width from the reference sheet of the document glass is scanned.

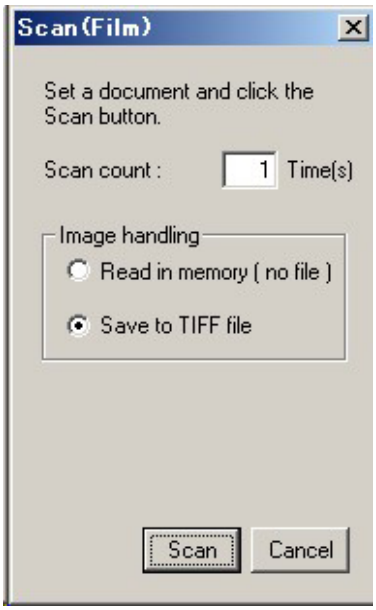
Image handling

When “Read in memory (no file)” is selected, the image is read into the memory and be destroyed. When “Save to TIFF file” is selected, the image is stored in the file called “img0.tif” in the folder of the Canon Scanner Test. When scan count is set at 2 or larger number, the scanned images are saved in more than one file including “img0.tif” file, “img1.tit” file, and “img2.tif” file.

File space to be saved is as follow:

75 dpi: 1.6MB
150 dpi : 6.6MB
300 dpi : 26MB
600 dpi : 105MB
1200 dpi : 15MB
2400 dpi : 59MB

5) Film Scan
Select “Film Scan” from the “Function” menu. The window shown below will appear. Only an upper right frame of the 35mm sleeve film guide can be scanned.



Scan count
Set a number to be scanned ranging from 1 to 100.

Image handling
When “Read in memory (no file)” is selected, the image is read into the memory and be destroyed. When “Save to TIFF file” is selected, an image file scanned by FAU lamp and an image file scanned by IR LED are saved. The images scanned by FAU lamp is stored in “Color24_0.tif” file, and the image scanned by IR LED is stored in “IR_0.tif” file. Both files are included in the folder of the Canon Scanner Test.
IR.tif is an infrared image scanned with FARE function working. If FARE function works normally, only dirt or dust on the film will be scanned as an image. If FARE function does not work well, IR.tif image will be all in black.
When scan count is set at 2 or larger number, the scanned images are saved in more than one file including Color24_0.tif/IR_0.tif, Color24_1. and tif/IR_1.tif.

Note: When scanning a film, the color of the scanned image may appear lighter than that of the original film. This is because the image is not subject to the image processing yet.

6) Error Message

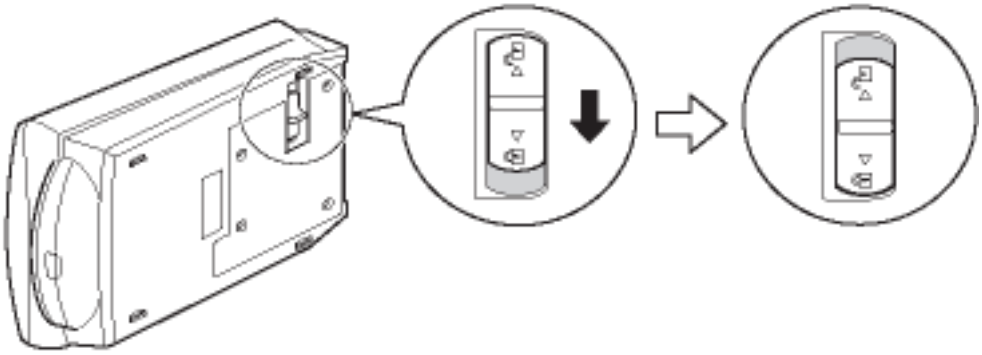
Indication	Cause	Corrective Action
Canon Scanner Test does not activate.	Scanner is not connected to the host computer. Scanner driver is not installed on the host computer.	Install scanner driver on the host computer, and connect the scanner to the host computer.
Unable to find the scanner. Check if the cables are connected properly.	Scanner is not connected to the host computer.	Refer to “Service Troubleshooing by Symptom”
Failed to read scanner information	Scanner is not properly connected to the host computer.	Refer to “Service Troubleshooing by Symptom”
Failed to create a file. Failed to open a file.	Canon Scanner Test is started from a CD-ROM or write-protected HDD.	Copy the Canon Scanner Test on a writable HDD to use.
Scanner has problem. Failed to execute scanner self test.	Scanner is not recognized by the host computer.	Refer to “Service Troubleshooing by Symptom”

5. Transport

When a unit, such as after repairing, is being transported, it needs a few cares in preparation for transport.

1) Turn on the power switch of scanner and return Carriage unit to home position.
2) Move the lock switch to ON side to fix Carriage unit.
3) Fix the scanner body with tape. [See the figure below]

Note:Use a fixing tape almost equivalent to the polyester one used for shipping product. (A tough, not easily peelable tape which would not leave its glue after peeled.)



Part 2
Technical Reference

1. New Features

(1) 30 frames continuous scan (35mm strip film)

Maximum 30 frames of 35mm strip film (6 frames x 5 strips) is available with a continuous scan, and maximum 12 frames for 35mm slide film.

(2) 2 kinds of film guide (for 120 format)

2 kinds of film guide for 120 format are accompanied.

One of the 120 format exclusive use guide deals with wide films: maximum 22 cm

The other one which deals with maximum 6 x 9cm film helps to scan the image evenly.

(3) Mobile light source system FAU

Newly adopted Mobile light source system FAU enabled to acquire twice light amount than ever before.

(4) FARE Level 3

Backlight correction function is newly added to FARE and it has become FARE Level 3.

2. Product FAQ (Particular problems and their corrective actions)

Item	Frequency*	Function	Symptom	Condition	Cause	Corrective action	Expected Call/Complaint
1	B	scan	Solid vertical line on the image	scan	Calibration is not executed	Execute calibration	Solid vertical line on the image
2	B	operation	Acoustic noise when the power turned on		Lock switch is not released	Release the lock switch	Acoustic noise
3	A	scan	Thumbnail does not display normally	Film scan Film scan with overexposure / underexposure films	Film images are not recognized as images.	Set Thumbnail “OFF” and scan	Thumbnail does not appear

* **Occurrence frequency**

A: Comparatively high frequency is possible (caution needed)

B: Possibly occurs under a certain condition, but actually the frequency is expected to be very low.

C: Not recognizable to general users and so harmless level is expected.

CanoScan 9950F SPECIFICATIONS
<Scanner Main Unit>

Type	Flatbed image scanner
Image sensor	6-line CCD
Optical resolution	4800dpi x 9600dpi
Light source	White cold cathode fluorescent lamp
Document type	Sheet, Book
Document alignment position	Right-end corner
Max. document size	A4/Letter size (216mm x 297mm)
Image mode	Color 16-bit input for RGB each, 16-bit/8-bit output Grayscale 16-bit input, 8-bit output
Preview time	Approximately 3.6 sec
Scanning time (Color)	11.0 msec/line
Scanning time (Gray)	11.0 msec/line
Power supply	AC adapter
Interface	UB2.0 Hi-Speed USB Full-Speed (USB1.1 equivalent) IEEE1394a (Macintosh only)
Scanner button	4 buttons (COPY, SCAN, PDF, MAIL) on the scanner unit
Operating environment	Temperature: 10 to 35 degrees Relative humidity: 10 to 90RH (Non condensing) Air pressure: 613-1013hPa
Power source	100-120V 50/60Hz 220-240V 50/60Hz
Power consumption	During operation: 28W During standby: 6W During power off: 0.1W(100V), 0.3W(200V)
Dimensions	290 x 509 x 128mm
Weight	Approximately 5.8kg

<Film Scanning Part>

Light source	Cold cathode fluorescent lamp
FARE	FARE Level 3
Film size	35mm strip 35mm slide 120 format (Maximum 6 x 22cm) 4”x 5”
Image mode	16-bit input for RGB each, 16-bit/8-bit output Grayscale 16bit input, 16bit/8bit output
Optical resolution	4800 x 9600 dpi
Scanning time	5.5-80 msec/line
Operating environment	Temperature: 10 to 35 degrees Relative humidity: 20 to 80%RH (Non condensation)